

Factors That Influence the Occurring of Rematoid Atritis (RA) in the Elderly in the Region of Puskesmas Raya Pematang Siantar 2021

Sri Wahyuni Tarigan¹, Jumadiyah Wardati Br Saragih², Meyana Marbun³

Universitas Efarina, Pematang Siantar, Indoneisa

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ABSTRACT

Keywords:

Rheumatoid,
Arthritis,
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This type of research is cross sectional, this study aims to determine the factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center. The subjects of this study were the elderly with a sample of 99 respondents. Data collection tools are questionnaires to answer questions and observation sheets. Rheumatoid arthritis is a disorder in the form of stiffness, swelling, pain and redness in the joints and surrounding tissues. Joint sufferers around the world have reached the number, especially in Indonesia, rheumatoid arthritis reaches 23.6% to 31.3%. This figure shows that the incidence of rheumatoid arthritis is high. There are several factors that influence the occurrence of rheumatoid arthritis in the elderly, namely, genetics, obesity, food and activity/work. This genetic factor influences the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center. The highest frequency which has the highest genetic factor is 12 respondents (12.1%) and the lowest frequency is 87 respondents (87.9%). Obesity factors affect the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center 29 respondents (29%) and the lowest is 70 respondents (70.0%) but affects the incidence of rheumatic arthritis in the elderly. Food factors that influence the occurrence of rheumatoid arthritis have the highest frequency with 86 respondents (86.3%) and the lowest frequency is 13 respondents (13.1%). Activity/occupation factors influence the occurrence of rheumatoid arthritis in the elderly with the highest frequency 76 respondents (76.8%) and the lowest 23 respondents (23 respondents)

E-mail:

sriwahyunitarigan21@gmail.com

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1. Introduction

In Indonesia, rheumatoid arthritis reaches 23.6% to 31.3%. This figure shows that the incidence of rheumatoid arthritis is high. An increase in the number of elderly populations who experience rheumatoid arthritis also occurs in East Java, based on Indonesian statistics (Depkes, 2016). From the data from the Indonesian health department, it was found that the largest disease was rheumatoid arthritis (16.76%). The majority of the elderly experience rheumatoid arthritis (Dinkes, 2016). Rheumatoid arthritis is a chronic systemic inflammatory disease with the main manifestations of progressive polyarthritis and involving organs throughout the body. Involvement of the joints in the patient Rheumatoid arthritis occurs after the disease progresses further according to its progression. The patient also shows symptoms of general weakness and fatigue. Rheumatoid arthritis is the number two disease that attacks the elderly in Indonesia (Rikesdas, 2014)

The incidence of Rheumatoid Arthritis RA has increased by 355 million people from 165 people in 2014. From the number of patients with rheumatoid arthritis, it is more common in women. Due to hormonal disturbances (estrogens) in the body (Lukman and Ningsi 2014). Rheumatic arthritis in Indonesia in 2013 had a prevalence of 45.59%, which increased from the results of basic health research. The number of population above 40 or more based on the world factbook in 2012 was 6.1% consisting of 6.6 million men and 8.4 million women (Ministry of Health, 2013).

To relieve pain can use anti-inflammatory agents, the drug of choice is aspirin. The increasing

number of population and the life expectancy of the elderly will cause various health, psychological, and socio-economic problems.

Grouping the boundaries of the elderly as follows, the middle age group 45-54 years, the early elderly group 55-64 years, the elderly group 65 years and over, the elderly group with high risk aged 70 years and over or the elderly group living alone, remote, suffering from chronic non-communicable diseases such as rheumatoid arthritis, severe or disabled. (Ministry of Health in Sutikno, 2011).

The problems of the elderly are mostly health problems due to the aging process, plus other problems such as financial problems, loneliness and feeling useless, and unproductive. There are many problems faced by the elderly, so health problems are the first role in the lives of the elderly such as the emergence of elderly diseases that often occur in the elderly (BKKBN, 2012).

In addition, rheumatoid arthritis is more often experienced by the elderly, so it needs special care and attention for the elderly with rheumatoid arthritis, especially in families and health centers (Fitriani, 2009). Based on initial data collection on the Tresna Werdha Minaula Kendari social beach, in 2017 data on the number of elderly people were 95 people, with 48 elderly female and 47 male elderly. From these data, it has been found that as many as 30 elderly people suffer from rheumatoid arthritis (Minaula Kendari, 2017). The results of research conducted by Meytania Utami, Haida et al (2015), stated that in age there is a relationship between age and the incidence of rheumatoid arthritis, in gender there is a relationship between gender and the incidence of rheumatoid arthritis. In lifestyle, there is a relationship between lifestyle and the incidence of rheumatoid arthritis in the community in the working area of the Ngemplak Simangon Public Health Center. And the results of the initial survey data on 17 May 2019 at the Pematangsiantar Public Health Center experienced rheumatic disease sufferers in the elderly, data obtained as many as 329 people, with 196 female elderly people, and 133 male elderly people.

2. Method

2.1 Types of research

This type of research uses cross sectional research. cross sectional is a study to study the dynamics of the correlation between risk factors and effects, by approaching, observing or collecting data at once (point time approach), (Notoatmodjo 2010). This study aims to obtain an objective picture of the factors associated with the occurrence of rheumatoid arthritis in the elderly in the Pematangsiantar Public Health Center area.

2.2 Place and time of research

a. Research Location and Research Time

The research location was carried out in the Pematangsiantar Public Health Center area. When the research was carried out in July-August 2021

2.3 Population and sample

a. Population

The population is the entire object of research or the object under study which is determined by the researcher to be studied and then the conclusion is drawn (Sugiyono, 2012). And the elderly population at Pematangsiantar Public Health Center amounted to 329 respondents.

b. Sample

The research sample is partly taken from the entire object under study and is considered to represent the entire population (Notoadmodjo, 2012). Then the formula used for sampling is:

$$n = 30\% \times N$$

Information:

n : Sample size

N : Large population

By using this formula, the sample of this research is obtained as much as:

$$n = 30\% \times 329 = 99$$

So the total number of samples is 99 elderly.

c. Sampling

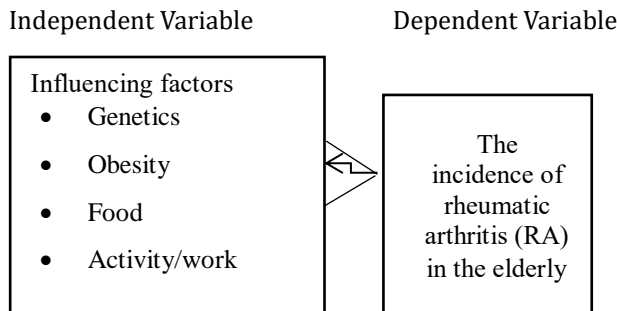
The technique used in sampling is simple random sampling. Where the entire population is given the opportunity to become a member of the sample.

2.4 Conceptual framework

Conceptual framework is an abstraction formed by generalizing an understanding. Therefore, the concept cannot be measured and observed directly. In order to be observed and measured, the concept must be translated into variables. From that variable the concept can be observed and measured. The

research concept framework is a description and visualization of other relationships or links between one concept and another, or between one variable and another variable from the problem to be studied. (Notoatmodjo, 2010).

The conceptual framework in this research can be described as follows:



Concept outline drawing 3.1

2.5 Operational Definition

The operational definition is operationally defining the variables based on the observed characteristics, thus enabling researchers to make careful observations or measurements of an object or phenomenon (Saryono, 2013).

Table 1
Operational Definition

Variable	Operational definition	Measuring instrument	Measurement result	Scale
Independent Genetics	Hereditary factors that affect rheumatoid arthritis	Questionnaire	1= Yes 0= None	ordinal
Obesity	Excessive body weight associated with rheumatoid arthritis >23.0-30	Questionnaire	1=Obesity 0=Not obese	Nominal
Food	Eating foods that contain lots of purines	Questionnaire	1=There 0=None	ordinal
Activity/ profession	Respondents do heavy work.	Questionnaire	1 =Weight 0 = light	ordinal

Variable	Operational Definition	Measuring instrument	Measurement result	Scale
Dependent Factors associated with the occurrence of rheumatic disease (RA).	The results of respondents know about the occurrence of rheumatic arthritis (RA).	A questionnaire with 5 statements, where if it is true it is given a value = 1 if Wrong value = 0	1. There is 2. There isn't any	ordinal

2.6 Measurement Aspect

To obtain information from respondents, researchers used a tool for data collection in the form of a questionnaire.

2.7 Factors associated with the occurrence of rheumatoid arthritis in the elderly.

The questionnaire of factors related to rheumatoid arthritis consists of 25 questions, namely genetic factors 1 question, obesity relationship factors 1 question, eating pattern relationship factors 3 questions, and work activity relationship factors 15 questions, which are categorized into yes and no, weight and light and arthritic questions 5 . The determination of the score is determined based on the calculation of the interval, namely the number of highest scores minus the number of lowest scores divided by the number of categories (Arikunto, 2009). Then a score is obtained for each category of factors associated with the occurrence of rheumatoid arthritis in the elderly

a) Genetic independent

$$P = \text{Highest value} - \text{lowest value}$$

Many classes

$$= \frac{2-0}{2}$$

$$= 1$$

Then the categories are:

- a) if yes score : 1 – 2
 - b) otherwise score : 0-1
- b) Obesity
P= Highest value-lowest value

Many classes

$$= \frac{1-0}{2}$$
$$= 1$$

Then the categories are:

- a) if yes score : 1 – 2
 - b) otherwise score : 0-1
- c) Food
P= Highest value-lowest value

Many classes

$$= \frac{6-2}{2}$$
$$= 3$$

Then the categories are:

- c) if yes score : 3 – 6
 - d) otherwise score : 0-3
- d) Activities / Jobs
P = Highest value-lowest value

Many classes

$$= \frac{0-7}{2}$$
$$= 15$$

Then the categories are:

- a) if yes score : 0-7
- b) otherwise score : 7-15

3. Results and Discussion

3.1 Research sites

The location of this research was carried out at the Puskesmas Raya located in the Timbangalung Village, Pematangsiantar City, with a working area of 4640 meters of Puskesmas and 170m of building area of Puskesmas. Puskesmas Raya has a Puskesmas room, general poly room, card room, poly group room, TB room, pharmacy room, laboratory room, immunization room, KIA/KB room, administration room/TU. The number of health workers at Pematangsiantar Public Health Center is 37.

3.2 Discussion

a. Gender

From the results of the study, it can be seen that 99 female respondents experienced rheumatoid arthritis as many as 79 people (20.0%) compared to men in the elderly who experienced rheumatoid arthritis as many as 20 people (79.8%). The incidence of rheumatoid arthritis is usually higher in women than in men. The incidence of rheumatoid arthritis, both in women and men, is highest at the age of 60 and over. Regarding the history of live births, most studies have found that women who have never had children have a slightly increased risk for rheumatoid arthritis (Hungu 2007), and research conducted at the Pematangsiantar Public Health Center for rheumatoid arthritis in elderly women is higher.

b. Age

From the results of research conducted at the Pematangsiantar Public Health Center that the elderly who experienced rheumatic disease with categories, aged 44 to 59 were 52 people 52 (52%), aged 60 to 70 were 36 people (36%) with those aged 71 to 70. 80 as many as 11 people (11%). As it is known that when you reach old age, your body condition changes where the protective layer of joints begins to thin and bone fluid begins to thicken, so that the body becomes sick when you move it and increases the risk of rheumatoid arthritis.

c. Genetic factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center in 2021

From the results of the analysis of research conducted at the Pematang Siantar Public Health Center, it showed that from 99 respondents in terms of factors that influenced genetics with the frequency obtained there were 60 people (60.0%) and there were 39 people (39.4%). Families who have family members affected by rheumatoid arthritis have a higher risk and also have the same nature of complaints in patients with the same gene (Junaiadi, 2017).

Some respondents who are affected by rheumatoid arthritis in the elderly have a genetic factor in which this gene also affects the aging process and the complaints experienced will be the same as those felt in the gene that gives patients with rheumatoid arthritis.

According to research that has been conducted by Unyun Nadliroh (2014) about genetic factors in the incidence of rheumatoid arthritis in the elderly, it shows that some respondents (70%) in the elderly have a family history of suffering from rheumatoid arthritis, this is in accordance with the theory put forward by Junaiadi that rheumatic disease is caused by genetic factor.

According to the author's assumption (2019), rheumatism can be caused by a hereditary history or is called genetic. But in fact this study shows that genetic prevalence affects, this means that most of the respondents suffer from rheumatic arthritis caused by factors due to genetic problems but there are also some because of genetics.

d. Obesity factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center in 2021.

From the results of research conducted that the elderly who are overweight with a frequency of 35 respondents (35.4%) and who are not obese as many as 64 respondents (64.6%). Excessive body weight is significantly associated with an increased risk for the development of rheumatoid arthritis in both women and men, with obesity not only associated with osteoarthritis in load-bearing joints, but also with rheumatoid arthritis in addition to other joints (hands or sternoclasts). 2017).

The results showed that the obesity factors that influenced the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center were 35 (35.4%). This is influenced by the existence of supporting factors for the elderly who suffer from rheumatic arthritis and the lifestyle of the elderly who have a risk of developing rheumatoid arthritis. In a study conducted at Pematang Siantar Public Health Center on obesity factors, it was concluded that it was not obesity that affected rheumatoid arthritis, but that there were some respondents who had rheumatoid arthritis and did not have excessive body weight. According to research that has been done by Reksi Ayu regarding the identification of obesity factors in the occurrence of rheumatoid arthritis in the elderly, it shows that 64 (35, 4%) some respondents are overweight but can also suffer from rheumatism. According to the writer's assumption (2019), rheumatism can be caused by obesity or obesity. But in fact this study shows that the prevalence of obesity is high and partially affects, this means that most of the respondents suffer from rheumatic arthritis not caused by factors due to obesity problems.

e. Dietary factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematansiantar Raya Public Health Center in 2021.

Based on the test results that 99 respondents who experienced rheumatoid arthritis in the elderly at the Public Health Center in Pematangsiantar, there were 52 (52.5%) people (13%) missing food factors and 47 (47.5%) purine-containing foods. many respondents Consuming foods that contain lots of purines can cause crystallization in the joints this is due to the habit of eating food, which triggers rheumatism or rheumatism recurrence, because food is an important factor in triggering rheumatism such as avoiding offal, and alcohol.

According to research conducted by Reksi Ayu regarding the identification of dietary factors for the occurrence of rheumatoid arthritis in the elderly, it was shown that 47 people (100) concluded that food had an effect on rheumatic disease. Foods that are processed slowly in the digestive tract will undergo fermentation, causing gas formation, bloating, headaches, and various diseases. Also toxic waste in the digestive tract can be sucked into the blood vessels, thus potentially triggering the emergence of chronic diseases, such as rheumatic diseases. (Iskandar Junaiadi, 2017).

According to the author's assumption (2019) that rheumatism can be caused by or food factors, and this study shows that the prevalence of dietary factors is high and affects the incidence of rheumatoid arthritis, this means that most respondents suffer from rheumatic arthritis caused by food factors that contain lots of meat purines, and nuts.

f. Activity/occupation factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center in 2021.

Based on the test results, 99 respondents with light activities/work were 38 respondents (38.4%),

and heavy activities/works received 61 respondents (61.6%). The results of the research test showed that the activity/occupation factor of the elderly at Pematangsiantar Public Health Center was very influential or could be said to be very related to the occurrence of rheumatic arthritis or its recurrence, activity factors with heavy workloads such as sports and pressure that could aggravate the hand joints in a long period of time. For a long time, it is often a complaint that is felt by elderly respondents at the Pematang Siantar Public Health Center. Physical activity requires the use of small joints such as the fingers and wrist joints in most rheumatic diseases such as RA, large joints are often involved,

4. Conclusion

Based on the results of research and discussion, the following conclusions can be obtained. Factors that influence the occurrence of rheumatoid arthritis in the elderly at Pematang Siantar Public Health Center are susceptible to occur at the age of 44 to 59 years, 60 to 70. With rheumatoid arthritis sufferers in the elderly, most of them occur in women with a total of 79.8%, according to (Lukman and Ningsi 2014) due to hormonal disorders (estrogens) in the body. In the elderly there are several factors that influence the occurrence of rheumatoid arthritis, namely this genetic factor affects the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center. The highest frequency that has genetic factors that do not affect 60 (60.6%) respondents and the lowest frequency that affects 39 (39.4%) respondents, Obesity factors affect the occurrence of rheumatoid arthritis in the elderly at Pematangsiantar Public Health Center who are obese 35 (35.4%) respondents. and the lowest is 64 (64.6%) respondents but affects the incidence of rheumatic arthritis in the elderly. dietary factors that influence the occurrence of rheumatoid arthritis have the highest frequency with 52 (52.35) respondents and the lowest frequency 47 (47.5%) respondents Activity/occupational factors affect the occurrence of rheumatoid arthritis in the elderly with the highest frequency 61 (61, 6%) respondents and the lowest was 38 respondents (38.4%). Of all these factors, the most influencing the incidence of rheumatoid arthritis in public health centers are activity/occupation factors which reached 61.8% and genetics 39.4%).

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